



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re: George et al.

Serial No.: 09/717,818

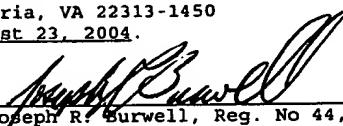
Filed: 11/21/2000

For: Method and system for a generic metadata-based mechanism to migrate relational data between databases

§ Group Art Unit: 2177
§
§ Examiner: Robinson, G.
§
§ Atty Docket #: AUS9-2000-0552-US1
§

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By: 
Joseph R. Burwell, Reg. No 44,468

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APPELLANT'S BRIEF
IN RESPONSE TO OFFICE ACTION UNDER 37 C.F.R. § 1.192

10 This brief is filed in triplicate in support of the previously filed Notice of Appeal, which was filed 05/21/2004, and which appealed from the decision of the examiner dated 0/16/2004 rejecting claims 1-18. The fee required under 37 C.F.R. § 1.17(c) for filing a brief in support of an appeal is
15 provided in the Transmittal of Appeal Brief filed herewith.

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1. **REAL PARTY IN INTEREST**

The real party in interest in this appeal is International Business Machines Corporation (IBM).

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2. **RELATED APPEALS AND INTERFERENCES**

With respect to other appeals or interferences that will directly affect, or be directly affected by, or have a bearing on 10 the Board's decision in the pending appeal, there are no such appeals or interferences.

3. **STATUS OF CLAIMS**

15 Claims 1-18 are pending in this application; claims 1-18 have been finally rejected; claims 1-18 have been appealed. No claims have been canceled, withdrawn, or allowed after final.

4. **STATUS OF AMENDMENTS**

20 No after-final amendments have been filed.

5. SUMMARY OF INVENTION

A method and system for migrating data between databases is provided. Metadata is obtained from a source database and used to determine the manner in which the data within the source database should be migrated to a target database (Specification, page 15, line 18). The metadata provides a mechanism for structuring queries to retrieve the data within the source database in a generic manner, thereby providing a generic determination of the structure of the data to be migrated (Specification, page 16, line 28). The dependencies among tables in the source database are discovered, thereby providing an order to the migration operations to be performed when migrating the data (Specification, page 16, line 8). This order ensures that the data can be migrated correctly in the presence of referential integrity (foreign key) constraints. In addition, custom mapping operations may be performed during the migration operations so that the data from the source database is modified before writing the data to the target database (Specification, page 17, line 30).

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6. ISSUES

The issues on appeal are:

- (A) whether claims 1-18 are unpatentable under 35 U.S.C. § 112, ¶ 1, as failing to comply with the written description requirement; and
- (B) whether claims 1-18 are unpatentable under 35 U.S.C. § 112, ¶ 2, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

7. GROUPING OF CLAIMS

The claims stand and fall together as a single group.

5 8. ARGUMENTS

8.A.

Was 35 U.S.C. § 112, ¶ 1, properly applied in a rejection of claims 1-18 as failing to comply with the written description requirement?

Quoting the entire rejection from the Office action, the rejection states:

Claims 1-18 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the art that the inventor(s), at the time the application was filed, has possession of the claimed invention. Regarding the limitation "first database" and "second database" these terms are not used in the disclosure nor the drawings nor figure 5A. In the disclosure Applicant refers to a source database and a target database see page 15. Also, Applicant has not defined the limitation "set of dependencies". Applicant refers to the dependencies among the tables at page 18 line 31 through page 19 line 7; but does not appear to refer to a set of dependencies or define what is meant by the term. The disclosure does not appear to describe how are the set of dependencies determined?

With respect to the objection to using the terms "first database" and "second database" in the claims whereas the specification uses the terms "source database" and "target database", Appellant notes that the adjectives "first" and "second" are common adjectives in the English language that generically distinguish one entity from another entity.

5 Appellant has merely replaced the adjectives "source" and "target" with the generic, broader adjectives of "first" and "second". Appellant argues that claim interpretation does not require the artificial ignorance of common language skills and that a patent practitioner may, to some degree, rely upon common knowledge and usage of language.

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In addition, Appellant asserts that the terms are commonly used by patent practitioners. Appellant has not used the terms in an illogical manner; on the other hand, Appellant asserts that the examiner's argument defies common logic. Moreover, the argument in the rejection is self-refuting; the fact that the rejection recognizes that the terms "first database" and "second database" in the claims correspond to the terms "source database" and "target database" in the specification refutes the argument in the rejection. More importantly, Appellant asserts that one having ordinary skill in the art would understand the broader terminology. Thus, Appellant asserts that the claims adhere to the written description requirements of 35 U.S.C. § 112, ¶ 1, because Appellant has reasonably conveyed the claimed invention through the written description to one having ordinary skill in the art.

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With respect to the objection to the use of the term "set of dependencies" whereas the specification uses the term "dependencies", Appellant notes that the generic phrase "set of" is a common English phrase that refers to a group or an

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association of one or more generic entities. Thus, the phrase "a set of dependencies" would be commonly interpreted by anyone as meaning "a plurality of dependencies", "a group of one or more dependencies", or "an association of one or more dependencies".

5 Moreover, the argument in the rejection is self-refuting; the fact that the rejection recognizes that the phrase "set of dependencies" in the claims corresponds to the term "dependencies" in the specification refutes the argument in the rejection. Given that the phrase "set of" is not a technical term and that Appellant has not used the phrase in a manner against common usage, Appellant asserts that one having ordinary skill in the art would easily comprehend the phrase "set of" and would apply the common interpretation of the phrase. Thus,

10 Appellant asserts that the claims adhere to the written description requirements of 35 U.S.C. § 112, ¶ 1, because Appellant has reasonably conveyed the claimed invention through the written description to one having ordinary skill in the art. Given that the basis for the rejections under 35 U.S.C. § 112, ¶ 1, is unfounded, Appellant requests that the rejection should not

15 20 be upheld on appeal.

8.B.

Was 35 U.S.C. § 112, ¶ 1, properly applied in a rejection of claims 1-18 as failing to comply with the written description requirement?

Quoting the entire rejection from the Office action, the rejection states:

Claims 1-18 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

5 Claims 1-18 are rejected under 35 U.S.C. § 112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap between the elements. See MPEP § 2172.01. The omitted elements are: the migration process implemented by database migratory 510 figure 5A.

10 A portion of the rejection from the first Office action was deleted in the final Office action, but the deleted portion helps to illustrate the illogical argument in the rejection:

15 Regarding claims 1, 7, and 13, the following limitation in the preamble is vague with respect to the elements in the body of the claim: "migrating data". Note Applicant refers to migrating data in the preamble, but does not describe migrating steps within the body of the claim.

20 Appellant notes that the phrase "migrating data" is common within the art for the concept of moving data that is stored in one location to another location. More importantly, the act of migrating data is not omitted in the claims because the act of migrating data is described over multiple elements within the claims of the present application. For example, the third element of independent claim 1 reads data from a first database while the fourth element of claim 1 writes data to a second database, thereby moving, i.e. migrating, data from one database 25 to another database. Appellant asserts that the claim language in the present application is sufficient to claim the process of 30

migrating data and that the argument in the rejection is illogical.

Furthermore, Appellant finds the rejection to be have been arbitrarily asserted against the present application. To support this conclusion, Appellant provides an example within an issued patent that illustrates that the claim language of the present patent application is similar to issued claims. Appellant did a quick patent search 10/08/2003 and found the following patent: Abrams, U.S. Patent Number 6,151,608, "Method and system for migrating data", issued 11/21/2000 by the same examiner that has rejected the claims in the present patent application.

10 Independent claim 1 of Abrams states:

15 1. An automated computer-implemented method for migrating source data from at least one source to at least one destination table of a database having a schema without a user having to write computer code, the method comprising the steps of:

20 defining patterns which describe format and content of the source data;

25 applying the patterns to the source data to create transformed data;

30 associating migration rules based on the schema with the patterns to generate a set of instructions that define migration paths; and

35 loading the transformed data in a sequence into the at least one destination table based on the set of instructions, the at least one destination table having a defined format and destination fields, wherein the step of loading is automatically sequenced based on the migration rules so that referential integrity is maintained.

Hence, Abrams also contains a claim preamble for a "method for migrating" data but does not use the verb "migrating" within the body of the claim, notwithstanding the fact that Abrams uses the term "migration rules" within the body of the claim. If the 5 present patent application omits essential elements of the migration process as asserted by the rejection, then Abrams also omits essential elements of the migration process as is argued in the § 112, ¶ 2 rejection against the claims of the present patent application by the same examiner that examined and issued the 10 claims in Abrams; if so, then the examiner should never have issued the claims in Abrams. Appellant asserts that the claim language in the present patent application follows the same logical pattern as the issued claims in Abrams. More 15 importantly, though, as noted above, Appellant asserts that the claim language in the present application is sufficient to claim the process of migrating data, and Appellant requests that the rejection should not be upheld on appeal.

9. Conclusion

20 In view of the above arguments, it is respectfully urged that the rejection of the claims should not be sustained.

DATE: August 23, 2004

Respectfully submitted,

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Joseph R. Burwell
Reg. No. 44,468

ATTORNEY FOR APPELLANT

30 Law Office of Joseph R. Burwell
P.O. Box 28022

Austin, Texas 78755-8022

Voice: 866-728-3688 (866-PATENT8)

Fax: 866-728-3680 (866-PATENT0)

Email: joe@burwell.biz

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10. APPENDIX OF CLAIMS

1. A method for migrating data between a first database and a
5 second database, the method comprising the steps of:

determining a set of dependencies among a plurality of
tables in the first database;

retrieving metadata from the first database, wherein the
metadata includes definitions for tables in the first database;

10 reading data from tables in the first database using a
plurality of read operations, wherein the read operations are
structured in accordance with the retrieved metadata, and wherein
the read operations are in an order indicated by the determined
set of dependencies; and

15 writing data to the second database using a plurality of
write operations, wherein the write operations are in an order
indicated by the determined set of dependencies.

2. The method of claim 1 further comprising:

20 storing the determined set of dependencies using markup
language to identify table dependencies.

3. The method of claim 1 further comprising:

storing the retrieved metadata using markup language to identify the retrieved metadata.

5 4. The method of claim 1 further comprising:

performing a predetermined modification operation on the data read from the tables in the first database prior to a write operation to the second database.

10 5. The method of claim 4 further comprising:

storing the predetermined modification operation using markup language to identify the predetermined modification operation.

15 6. The method of claim 1 wherein the first database and the

second database have dissimilar schemas.

7. An apparatus for migrating data between a first database and a second database, the apparatus comprising:

 determining means for determining a set of dependencies among a plurality of tables in the first database;

5 retrieving means for retrieving metadata from the first database, wherein the metadata includes definitions for tables in the first database;

 reading means for reading data from tables in the first database using a plurality of read operations, wherein the read operations are structured in accordance with the retrieved metadata, and wherein the read operations are in an order indicated by the determined set of dependencies; and

10 writing means for writing data to the second database using a plurality of write operations, wherein the write operations are in an order indicated by the determined set of dependencies.

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8. The apparatus of claim 7 further comprising:

 first storing means for storing the determined set of dependencies using markup language to identify table dependencies.

9. The apparatus of claim 7 further comprising:
second storing means for storing the retrieved metadata
using markup language to identify the retrieved metadata.

5 10. The apparatus of claim 7 further comprising:
performing means for performing a predetermined modification
operation on the data read from the tables in the first database
prior to a write operation to the second database.

10 11. The apparatus of claim 10 further comprising:
third storing means for storing the predetermined
modification operation using markup language to identify the
predetermined modification operation.

15 12. The apparatus of claim 7 wherein the first database and the
second database have dissimilar schemas.

13. A computer program product in a computer readable medium for use in a data processing system for migrating data between a first database and a second database, the computer program product comprising:

5 instructions for determining a set of dependencies among a plurality of tables in the first database;

 instructions for retrieving metadata from the first database, wherein the metadata includes definitions for tables in the first database;

10 instructions for reading data from tables in the first database using a plurality of read operations, wherein the read operations are structured in accordance with the retrieved metadata, and wherein the read operations are in an order indicated by the determined set of dependencies; and

15 instructions for writing data to the second database using a plurality of write operations, wherein the write operations are in an order indicated by the determined set of dependencies.

14. The computer program product of claim 13 further comprising:

20 instructions for storing the determined set of dependencies using markup language to identify table dependencies.

15. The computer program product of claim 13 further comprising:
instructions for storing the retrieved metadata using markup
language to identify the retrieved metadata.

5 16. The computer program product of claim 13 further comprising:
instructions for performing a predetermined modification
operation on the data read from the tables in the first database
prior to a write operation to the second database.

10 17. The computer program product of claim 16 further comprising:
instructions for storing the predetermined modification
operation using markup language to identify the predetermined
modification operation.

15 18. The computer program product of claim 13 wherein the first
database and the second database have dissimilar schemas.